Stanton Nuclear Security Fellows Seminar

PANEL 4: Nonproliferation Regime

1. Mariana Budjeryn, Belfer

The Power of the NPT: International Norms and Nuclear Disarmament of Belarus, Kazakhstan, and Ukraine, 1990-1994

My research examines how the Treaty on the Nonproliferation of Nuclear Weapons (NPT) works to induce nuclear nonproliferation and disarmament. With 190 member states and few instances of noncompliance, the NPT is one of the most prominent and widely adhered to international regimes in history and yet its impact on worldwide nuclear restraint is not sufficiently understood. Is the NPT merely an outcome of nonproliferation decisions taken for other reasons or do its proscriptions contribute to nuclear restraint, and if so, in what ways? Knowing how the NPT works, or does not work, to promote nuclear restraint and renunciation can help policy-makers make it more salient and better channel the limited resources devoted to the ongoing international nonproliferation effort.

In order to answer the question, I theorize a range of normative mechanisms, through which the NPT could affect nuclear renunciation and restraint, and examine their salience in the politics of nuclear disarmament of Ukraine, Belarus, and Kazakhstan in 1990-1994. The three case studies are reconstructed in considerable detail and draw primarily on my original research in the archives in Kyiv, Almaty, and Minsk, as well as on declassified documents available through the National Security Archive and the US Department of State FOIA collections, memoirs and personal interviews with some of the key participants in the process of post-Soviet denuclearization. Ukrainian, Belarusian and Kazakhstani archival records thus far have been largely untapped and their inclusion contributes to a more nuanced understating of the history of post-Soviet nuclear disarmament and of the post-Soviet transition more broadly.

The politics of post-Soviet denuclearization is fascinating in its own right. The collapse of a nuclear superpower was – and remains – an unprecedented event in world history. In 1991, the defunct Soviet Union left shards of its colossal nuclear arsenal scattered across the vast Eurasian landmass now under the sovereignty of not one, but four newly independent states. While Russia inherited more than two-thirds of the Soviet Union's nuclear armament as well as its status as a nuclear-weapons state under the NPT, the status of nuclear arms on the territory of Ukraine, Belarus, and Kazakhstan was far more ambiguous. Whose weapons were they? Who controlled them? What claims could the non-Russian republics legitimately make in regard of them? Who were the successors of the Soviet Union in relation to its arms control obligations under START, CFE, and the NPT?

The US and Russia, as well as the wider international community, quickly formulated an expectation that Belarus, Kazakhstan, and Ukraine should relinquish their nuclear inheritances and join the NPT as non-nuclear-weapons states. By 1994, all three did just that. Yet they followed remarkably different paths toward disarmament and NPT accession. While Belarus proceeded to disarm consistently and smoothly, both Ukraine and Kazakhstan underwent periods of contestation, claiming their entitlement to the nuclear arsenals on their territory as Soviet successor states.

By examining similarities and divergences between the paths of Ukraine, Belarus, and Kazakhstan toward the NPT, the research reveals how the value of nuclear weapons became part and parcel of the emerging national security narratives of these three newly independent states, heavily influenced by national identity, historical interpretations, and negotiations of their new role as sovereigns in the international system. A combination of factors entered into nuclear deliberations and precipitated the nuclear renunciation of Ukraine, Belarus, and Kazakhstan: the concerted political pressure from the US and Russia, the availability of US technical and financial support for disarmament, the dire economic crisis of post-Soviet transition, as well as anti-nuclear sentiments triggered by the Chernobyl nuclear power plant disaster in Ukraine and Belarus and the Semipalatinsk nuclear test site in Kazakhstan.

At the same time, the research finds that the NPT shaped the political environment, in which deliberations on the fate of former Soviet nuclear armaments transpired, in a number of important ways. First, the NPT guarded a separate normative space for nuclear possession. After all, the claim to legal succession was not controversial in itself: the non-Russian republics were recognized Soviet successors in regard to Soviet conventional armaments. Yet the mere existence of the NPT meant that the nuclear part of the Soviet inheritance fell under a different set of rules. Second, the NPT provided the normative grammar: its stark binary categories of 'nuclear-weapons state' and 'non-nuclear-weapons state' could not accommodate any of Ukraine's and Kazakhstan's claims of entitlement to their nuclear inheritance. Third, the nonproliferation norm levied the burden of justification squarely on those political actors in Ukraine, Belarus and Kazakhstan who advocated the retention of nuclear arms. And finally, the nonproliferation norm legitimized the great powers' threat of negative consequences for nuclear proliferation that would have otherwise been construed as arbitrary and even provoked a backlash.

These findings diverge from much of the existing scholarship, which explains nuclear decision-making and nonproliferation in terms of drivers other than normative: security seeking, great power inducements, alliance politics, technological availability, domestic economic considerations and national identity conceptions.[1] Most of these accounts find the NPT either irrelevant or marginal to nuclear

[1] To name just a few contributions, Kenneth Waltz, "Nuclear Myth and Political Realities," *American Political Science Review* 84, no. 3 (1990); Dong-Joon Jo and Erik Gartzke, "Determinants of Nuclear Weapons Proliferation," *Journal of Conflict Resolution* 51, no. 1 (2007): 167–194; Matthew Fuhrmann, "Spreading Temptation: Proliferation and Peaceful Nuclear Cooperation Agreements," *International Security* 53, no. 2 (2009): 7–41; Nicholas L. Miller, "The Secret Success of Nonproliferation Sanctions," *International Organization* 68, no. 4 (September 2014): 913–944; Gene Gerzhoy, "Alliance Coercion and Nuclear Restraint: How the United States Thwarted West Germany's Nuclear Ambitions," *International Security* 39, no. 4 (Spring 2015): 91–129; Etel Solingen, *Nuclear Logics. Contrasting Paths of East Asia and the Middle East* (Princeton University Press, 2007);

decision-making: it is rather an outcome than a cause of nonproliferation. The exception to this trend is Maria Rost Rublee's study, which argues that the NPT has created a systemic positive impact on nuclear restraint through the mechanisms of persuasion, social influence, and emulation.[2] My research further expands Rublee's approach and conceptualizes and empirically examines additional, constitutive mechanisms through which the NPT can shape nuclear options and nuclear discourses.

The policy relevance of this research project is first of all in the nonproliferation and counter-proliferation realm, which has been one of the topmost priorities of the US foreign policy. Early 1990s may have marked the heyday of the NPT, culminating in its indefinite extension in 1995. Since then, a number of developments have hampered the regime, including the nuclear acquisitions by India and Pakistan, the withdrawal from the NPT of DPRK in 2003 and its subsequent nuclear tests, as well as what many non-nuclear-weapons states characterize as an unsatisfactory rate of disarmament by the nuclear-armed states. Knowing what made the NPT so effective in the past, can help understand how to strengthen it today.

The NPT's capacity to nudge Ukraine, Belarus, and Kazakhstan toward denuclearization was predicated on the cooperation of the vast majority of states, in particular the US and Russia, on its enforcement, as well as the overall positive momentum in arms control created by the drastic cuts in US and Russian strategic armaments under START. As Joseph Nye aptly noted, nuclear nonproliferation is a policy, not the policy in any given state.[3] It sometimes comes into conflict with other policy priorities; nor is it always pursued within the fold of the NPT. The case in point is the 2005 US-India Civil Nuclear Cooperation deal that served the purposes of nuclear security, but undermined the status of the NPT as the only legitimate framework for nuclear possession. The present examination of the NPT serves to warn against policies that discount or bypass the NPT for the sake of short-term effectiveness: international regimes are difficult to build, maintain, and enforce, but the task is well worth it in the long-term.

The research is also pertinent in view of the ongoing Russo-Ukrainian conflict and the renewed interest toward the history of Ukraine's nuclear disarmament. Russia's annexation of the Ukrainian peninsular of Crimea in 2014 and its continued involvement in the conflict in eastern Ukraine bring into an uncomfortable focus the security commitments pledged by the nuclear powers to Ukraine – as well as Belarus and Kazakhstan – in connection with their accession to the NPT as non-nuclear-weapons states. My research aims to contribute to a balanced and evidence-based discussion of the causes and consequences of Ukraine's denuclearization, assess the repercussions of the conflict for the nonproliferation regime, and evaluate claims of the parties to the conflict and Western responses to it.

As the project develops, I am looking to expand the discussion of the relationship between international norms and state power. The two are often considered as competing explanations of nonproliferation

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Jacques E. C. Hymans, *The Psychology of Nuclear Proliferation: Identity, Emotions, and Foreign Policy* (Cambridge: Cambridge University Press, 2006).

[2] Maria Rublee, *Nonproliferation Norms: Why States Choose Nuclear Restraint* (Athens, GA: University of Georgia Press, 2009).

[3] Joseph S. Nye, "Maintaining a Nonproliferation Regime," *International Organization* 35, no. 1 (Winter 1981): 31.

outcomes and part of the challenge is to disentangle the effects of the nonproliferation norm versus great power coercion when they seem to work in collusion. Certainly, in the cases of Belarus, Kazakhstan and Ukraine both the proscriptions of the NPT and the interests of the US and Russia worked together to induce nuclear disarmament. I believe, however, that rather than juxtapose norms and power, it is more productive to conceive of them as engaged in constant interaction: whether in conflict, collusion or mutual constitution. Norms are not reducible to great power interests, yet they are not simply out there causing outcomes: norms rely on agents to construct, interpret, and enforce them. Agents in international politics are besieged by power differentials and asymmetries. At the same time, states, including great powers, act not only *with* or *against* commonly held normative understandings in pursuit of their interests, but also *within* a certain normative order that delineates the realm of the feasible and the legitimate.

2. Nicholas Miller, Belfer

Nuclear Energy and Proliferation: Examining the Links

Do nuclear energy programs facilitate the spread of nuclear weapons? This question is of crucial policy relevance as countries like Saudi Arabia, Turkey, Egypt, the United Arab Emirates, and Vietnam have embarked on nuclear energy programs,[4] while Iran persists with its own atomic energy effort. Although enthusiasm for nuclear energy has declined in recent years due to the Fukushima disaster of 2011, it nonetheless retains appeal as a component of strategies for combatting climate change.

Yet despite its importance, this question has received little sustained attention from social scientists. Indeed, this lack of research helps explain why in 2011 Scott Sagan identified as an important future research question, "Does the civilian nuclear power industry constrain states or does it make nuclear weapons proliferation easier?"[5]

Existing Understandings

The conventional wisdom in much academic and policy literature is that energy programs tend to increase the risk of nuclear proliferation, by providing countries with the means, motive, or political opportunity to develop nuclear weapons. First, in terms of means, nuclear energy program involves training scientists in nuclear physics and engineering, providing them with basic skills and know-how that could be repurposed toward a nuclear weapons program.[6] Moreover, nuclear energy programs inherently involve constructing power reactors, which produce plutonium as a natural byproduct of the fission process.[7] When coupled with a reprocessing facility, which can be used in nuclear energy programs to recycle plutonium for use in reactor fuel, power reactors allow states to acquire fissile material for a nuclear bomb.[8] Alternatively, states with nuclear energy programs might develop enrichment technology in order to produce low-enriched uranium (LEU) fuel for their reactors; this technology would simultaneously provide a state with the capability to produce highly enriched uranium (HEU) for use in nuclear weapons.[9]

Second, in terms of motives, analysts have worried that the development of nuclear energy infrastructure could increase the desire for proliferation down the road. This could occur because the

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[4] See http://www.world-nuclear.org/info/Country-Profiles/Others/Emerging-Nuclear-Energy-Countries/
[5] Scott Sagan, "The Causes of Nuclear Weapons Proliferation," *Annual Review of Political Science* 14 (2011): 240.
[6] See Matthew Bunn, "Civilian Nuclear Energy and Nuclear Weapons Programs: The Record," Working Paper, 29 June 2001, 8.
[7] See M.D. Zentner, G.L. Coles, and R.J. Talbert, *Nuclear Proliferation Technology Trends Analysis*, Pacific Northwest National Laboratory, September 2005, 60-83; Victor Gilinsky, "Nuclear Power, Nuclear Weapons—Clarifying the Links," in *Moving Beyond Pretense: Nuclear Power and Nonproliferation*, ed. Henry Sokolski (Carlisle, PA: US Army War College Press, 2014),125-6l; and Victor Gilinsky, Marvin Miller, and Harmon Hubbard, "A Fresh Examination of the Proliferation Dangers of Light Water Reactors," *Nonproliferation Policy Education Center*, October 2004.
[8] M.D. Zentner, G.L. Coles, and R.J. Talbert, *Nuclear Proliferation Technology Trends Analysis*, Pacific Northwest National Laboratory, September 2005, 83-102.
[9] See Gilinsky, "Nuclear Power, Nuclear Weapons," 133-4; and Steven Miller and Scott Sagan, "Alternative Nuclear Futures," *Daedalus* 139, No. 1 (2010): 128.

technology itself creates an irresistible demand for weapons where one did not previously exist,[10] or because a nuclear energy program involves the creation and strengthening of a bureaucracy who might later push a weapons program for parochial reasons.[11]

Finally, it has been argued that even in cases where nuclear energy programs do not *motivate* a nuclear weapons program, they might nonetheless provide political cover for a program.[12] An energy program could provide justification for the acquisition of enrichment, reprocessing, or other weapons-related technology from foreign countries, thereby allowing the proliferating state to simultaneously procure the necessary technology while plausibly denying any weapons intentions.[13] This ability to deny a weapons program could help a proliferator weaken international opposition, thereby increasing the odds of successful acquisition. Indeed, Article IV of the Nonproliferation Treaty (NPT) explicitly guarantees the right of signatories to peaceful nuclear technology, which can include reactors, reprocessing, and enrichment facilities.

While previous empirical studies have examined the role of nuclear cooperation agreements between countries and sensitive nuclear assistance in spurring proliferation,[14] there is little in-depth empirical research that systematically examines the relationship between energy programs and proliferation across countries and over time. The works that come closest to doing so tend to find a surprisingly tenuous relationship between energy and weapons,[15] which suggests a fuller auditing of the conventional wisdom is in order. Bunn, for example, finds that "civilian nuclear energy is by no means the driving force behind nuclear proliferation,"[16] but he does not examine whether the odds of pursuing nuclear weapons are higher in countries with nuclear energy programs compared to countries that do not have them.

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[10] See Stephen Meyer, *The Dynamics of Nuclear Proliferation* (Chicago: University of Chicago Press, 1986); Peter Lavoy, "Nuclear Myths and the Causes of Nuclear Proliferation," *Security Studies* 2, No. 3-4 (1993), 194-5; and Sonali Singh and Christopher Way, "The Correlates of Nuclear Proliferation," *Journal of Conflict Resolution* 48, No. 6 (December 2004): 862-3.

[11] Scott Sagan, "Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb," *International Security* 21, No. 3 (Winter 1996/1997): 63.

[12] Bunn, "Civilian Nuclear Energy and Nuclear Weapons Programs," 8.

[13] See Gilinsky, "Nuclear Power, Nuclear Weapons," 127-8; Susan Voss, "Scoping Intangible Proliferation Related to Peaceful Nuclear Programs: Tracking Nuclear Proliferation Within a Commercial Nuclear Power Program," in *Moving Beyond Pretense*, 149-152; Harold Feiveson, "A Skeptic's View of Nuclear Energy," *Daedalus* 138, No. 4 (2009) 65-66; and Steven Miller and Scott Sagan, "Nuclear Power without Nuclear Proliferation?" *Daedalus* 138, No. 4 (2009): 13.

[14] See Matthew Fuhrmann, "Spreading Temptation: Proliferation and Peaceful Nuclear Cooperation Agreements," *International Security* 34, No. 1 (Summer 2009): 7-41; Matthew Kroenig, *Exporting the Bomb: Technology Transfer and the Spread of Nuclear Weapons* (Ithaca, NY: Cornell University Press, 2010); and Robert Brown and Jeffrey Kaplow, "Talking Peace, Making Weapons: IAEA Technical Cooperation and Nuclear Proliferation," *Journal of Conflict Resolution* 58, No. 3 (2014): 402-428.

[15] See Brown and Kaplow, "Talking Peace, Making Weapons," Michael Horowitz, "Nuclear Power and Militarized Conflict," in *The Nuclear Renaissance and International Security*, 288-312, and Kroenig, *Exporting the Bomb*, 162-168.

[16] Bunn, "Civilian Nuclear Energy and Nuclear Weapons Programs," 8.

Argument and Hypotheses

In contrast to much conventional wisdom, my preliminary quantitative analysis of all country-years between 1945 and 2000 demonstrates that countries with nuclear energy programs (defined as having a power reactor operating or under construction) have not been significantly more likely to pursue nuclear weapons, nor more likely to acquire conditional on having a weapons program. These results hold even when accounting for potential confounding variables such as alliances, security environment, regime type, and industrial capacity. The results are also robust to only analyzing the period from 1960 or 1970 onward, by which time nuclear energy programs had proven economically feasible.

My overarching argument is that much of this disjuncture between the conventional wisdom and the empirical evidence is due to the fact that policymakers have been aware of the risks of energy programs facilitating proliferation and have taken effective policy steps to stop this from happening. As a result, while an energy program increases the technical capacity of a state to develop nuclear weapons, it also creates important political obstacles to seeking and acquiring the bomb. I hypothesize three mechanisms that may account for the lack of a strong association between energy programs and proliferation.

1. Fear of Sanctions. States that rely on nuclear energy to power their economy will be wary of pursuing nuclear weapons since it is likely to lead to a cutoff in nuclear fuel supplies and technology.

2. Improved Intelligence. Energy programs are highly visible and involve contracting with foreign firms and governments; this generally comes with safeguards and is likely to draw attention from intelligence agencies that are wary of the energy-proliferation linkage, increasing the likelihood that a weapons program is detected. This facilitates nonproliferation interventions such as sanctions or technology denial.

3. Technological Barriers. Countries with an interest in nonproliferation often focus on exporting light water reactors. While this type of reactor *can* produce plutonium usable in weapons, it is not optimal and requires the reactor to be utilized in a unusual fashion that would raise suspicion.[17] Moreover, they use enriched uranium as fuel, often leaving countries dependent on foreign fuel supplies. These facts can make it difficult to convert an energy program based on light water reactors to a weapons program.

I will also evaluate an important alternative mechanism that might help account for the lack of a strong relationship between energy programs and proliferation:

4. Hedging. States with particularly advanced energy programs might derive some political and security benefits from their technical ability to build nuclear weapons in short order, thus reducing their incentive to cross the finish line and develop weapons.

[17] Gilinsky, et al, "A Fresh Examination of the Proliferation Dangers of Light Water Reactors," 25-29.

Methods

To evaluate Hypothesis 1, I will examine quantitatively whether the likelihood of a country exploring or pursuing nuclear weapons declines as their energy program matures in size or importance. I will also qualitatively examine the secondary literature to explore whether countries with energy programs considered nuclear weapons development and rejected it partly to avoid sanctions that could affect their energy sector. To evaluate Hypothesis 2, I will analyze declassified documents to systematically examine whether US and IAEA intelligence was more accurate or timely for the universe of countries that pursued nuclear weapons with an energy program, comparing those cases to all countries that pursued weapons without a weapons program. I will also assess whether these countries were more likely to face nonproliferation interventions. To assess Hypothesis 3, I will explore whether nuclear suppliers interested in nonproliferation deliberately emphasized light water reactors, and if there is evidence this inhibited weapons programs in any countries. Finally, to assess Hypothesis 4, I will examine whether countries with advanced nuclear energy programs historically have (1) perceived political or security benefits from their technical capabilities, and (2) whether this has influenced their demand for weapons.

Policy Implications

If the above hypotheses are borne out, two primary policy implications are apparent. First, when a country announces it will develop nuclear energy, it should not be assumed that this is a precursor to a weapons program. Second, and most importantly, nuclear energy has not increased the risk of proliferation to a large degree because of effective policy interventions, which should be maintained or strengthened to ensure the spread of nuclear energy in the future does not lead to additional nuclear weapons states.

Weaknesses in the Project

One challenge I face in this project is clearly separating the effects of nuclear energy programs from other nuclear activities that often go along with them, such as the construction and use of research reactors and peaceful nuclear cooperation with foreign countries or the IAEA. Another challenge is making sure the project is sensitive to differences between historical time periods, as energy programs might have a different effect depending on the status of the nonproliferation regime or available technology.

3. Joseph O'Mahoney, MIT SSP

Norm Violations and Norm Dynamics in the Nuclear Nonproliferation Regime

Puzzle

The nuclear non-proliferation regime is widely regarded as one of the most robust in international relations and it is credited with being effective in helping to prevent the once-anticipated spread of nuclear weapons.[18] As Scott Sagan has said, "the emergence of the NPT in 1968 and the later addition of related institutions, such as the Nuclear Suppliers Group (NSG), appear to have influenced many decisions to refrain from developing military applications of nuclear power programs."[19] Yet there have been serious violations of the norms and rules making up the regime, including successful attempts by India, Pakistan, Israel, and more recently North Korea, to obtain nuclear weapons. In international politics flagrant violations of, or non-compliance with, a norm carries the risk of causing the norm to weaken and decay. Why, then, has the nonproliferation regime survived?

Existing literature on nonproliferation norms has investigated some important aspects of norms concerning nuclear weapons. These include reasons why states do not use, or threaten to use, nuclear weapons when they might,[20] why they exhibit nuclear restraint,[21] i.e. not pursue or cease pursuing nuclear weapons, and why and how states and international organizations pursue strategies of inhibition,[22] or try to stop others from developing nuclear weapons. However, an unexplored yet crucial question is how the norm is upheld or maintained in the face of a clear violation like India's 'peaceful nuclear explosion' (PNE – also called Smiling Buddha or Pokhran 1) in 1974.[23] At the time there was serious concern that India's PNE meant that "The non-proliferation problem is at a crucial stage",[24] and UK Foreign Secretary James Callaghan bluntly asked US Secretary of State Henry Kissinger, 'Is the NPT dead?', referring to the recently signed Treaty on the Non-Proliferation of Nuclear Weapons.[25] And yet the NPT is alive and well. This project applies theories of international norm dynamics to a crucial

[18] Nicholas Miller, 2014. The Secret Success of Nonproliferation Sanctions, *International Organization*, 68(4): 913-944. Matthew Fuhrmann and Yonatan Lupu. 2017. "Do Arms Control Treaties Work? Assessing the Effectiveness of the Nuclear Nonproliferation Treaty." *International Studies Quarterly*, forthcoming.
[19] Sagan, Scott D., 2011. The causes of nuclear weapons proliferation. *Annual Review of Political Science*, *14*, p.227.
[20] Tannenwald, Nina, 2007. *The Nuclear Taboo: The United States and the Non-Use of Nuclear Weapons Since 1945*, Cambridge University Press.
[21] Rublee, Maria, 2009. *Nonproliferation Norms: Why States Choose Nuclear Restraint*, University of Georgia Press.
[22] Gavin, Francis J., 2015. Strategies of Inhibition: US Grand Strategy, the Nuclear Revolution, and Nonproliferation. *International Security*,*40*(1): 9-46;
[23] Perkovich's (2001) detailed study of India's nuclear program does not specifically theorize the impact that India's nuclear testing had on global nonproliferation.
[24] Executive Secretary George S. Springsteen to Secretary of State Kissinger, "Analytical Staff Meeting," doc. 5, 11 July 1974, in "Declassified Documents Show Henry Kissinger's Major Role," NSA, EBB no. 467
[25] Meeting with British Officials', 7 July 1974, in *Kissinger Transcripts*, Digital National Security Archive, KT 01245

episode in the evolution of the nonproliferation regime. Why did India's challenge to the nonproliferation norm not lead to the unraveling of the nonproliferation regime?

The objective of the project is twofold: first, to classify the type of norm dynamics resulting from India's test and second, to explain why and how that process occurred rather than another. These concerns mandate answering a series of subquestions. What were the reactions to India's nuclear test? Did people think that it threatened the norm and how? What were the mechanisms by which the international community tried to sustain or continue the norms making up the nonproliferation institutions? Finally, why were those mechanisms successful? Thus, the dependent variables are, first, state reactions to India's successful nuclear test, and, second, the status of the nonproliferation norm complex itself in the face of the serious challenges of India's norm violation.

Concepts and Methods

The core properties of the phenomena referred to as rules, norms, and institutions are sets of beliefs. Bicchieri defines the minimal condition for a norm as that for each individual i in a population, i knows that a rule R exists and applies to situations of type S.[26] So, to the extent that there was a nonproliferation norm prior to India's nuclear test, actors involved should have known what it was and what the content of it was. Second, Bicchieri identifies both empirical expectations, i.e. the belief that others will comply with the norm, and normative expectations, i.e. the belief that others expect you to comply with the norm and may sanction violations. India's nuclear test seems to have been a violation of empirical expectations, i.e. once India had exploded a nuclear device, other states became less sure that states would in fact comply with a nonproliferation norm. However, normative expectations are also crucial. Who took steps to establish or reestablish the normative expectations surrounding possession and use of nuclear technology, how did they do so, i.e. what steps did they take and why did they take them?

Assessing beliefs is notoriously difficult, but as Finnemore and Sikkink point out, despite the fact that we "can only have indirect evidence of norms... norms prompt justification for action and leave an extensive trail of communication among actors that we can study".[27] So, the focus of this project is on the ways in which states and other actors talked and wrote about India's nuclear program in 1974 and afterwards. Historical case analysis is thus crucial to a precise and accurate assessment of the development of nonproliferation norms. In addition to secondary sources, I intend to use declassified documents from the US and the UK, as well as assessing international public reactions through documents from international organizations and news media.

Norm Assessment and Explanation

Recent scholarship on norm dynamics has emphasized the need for precision in description of norm change. Wunderlich lists five directions of norm change: obsolescence, where actors no longer believing

[26] Bicchieri, Cristina. 2006. *The Grammar of Society: The Nature and Dynamics of Social Norms*. Cambridge University Press, 11.
[27] Finnemore, Martha, and Kathryn Sikkink. 1998. "International norm dynamics and political change." *International Organization.* 52(4): 892.

it exists or applies; replacement by a different norm; adaptation, so that it has different content, obligations, or application; differentiation, so that it becomes more clear and precise, and maintenance, where the norm continues as it did before.[28] Did one of these five types of norm development occur as a response to India's test? Or was there a different or more specific type of change in this case?

There are three major classes of theory for why and how the nonproliferation norm complex continued in after India's test. The first is based on the idea that powerful states make and enforce the rules. As Gavin and Miller have argued, the US has expended significant effort on stigmatizing and encouraging norms against the possession of nuclear weapons.[29] Thus, one type of answer is that nonproliferation norm dynamics are driven by US behavior, although there are not existing accounts of exactly how the US achieves. Another possibility is that the international community managed to recoordinate their expectations without substantial assistance from the US. Coordination processes include using public rituals as attempts to use mutual experience to create common knowledge aimed at coordination,[30] and the creation of strategic expectations through identification of common conjectures.[31] A third class of theory is that there the nonproliferation norm because it was so internalized that India's violation did not affect it. This involves constructivist ideas of socialization,[32] and logics of appropriateness.[33]

There are clear policy implications of this research into the stability and robustness of nonproliferation norms, and the tools used to maintain them. For example, nonproliferation norms might be highly fragile and so in the face of violations much US activity is needed to maintain it. By contrast, if the international community can easily coordinate their expectations or if there is no need to expend resources on maintaining a firmly internalized norm, then current US nonproliferation policy is unnecessarily active and hence a waste of time, effort, and resources. Further, given the continuing success of the nonproliferation norm despite challenges, identification and evaluation of the tools used to maintain the norm is valuable.

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[28] Wunderlich, Carmen, 2013. Theoretical Approaches in Norm Dynamics. In Harald Muller and Carmen Wunderlich (eds). *Norm dynamics in multilateral arms control. Interests, conflicts, and justice*, University of Georgia Press, pp. 20-50.
[29] Gavin 2015: 26-7; Miller 2014.
[30] Chwe, M. S. 2001. *Rational Ritual: Culture, Coordination, and Common Knowledge*, Princeton, N.J.: Princeton University Press.
[31] Morrow, James D.**.** *Order within Anarchy: The Laws of War as an International Institution.* Cambridge: Cambridge University Press, 2014
[32] Checkel, J.T., 2005. International institutions and socialization in Europe: Introduction and framework.*International organization*,*59*(04), pp.801-826.
[33] March, J.G. and Olsen, J.P., 1998. The institutional dynamics of international political orders. *International organization*, *52*(04), pp.943-969.